

WHAT IS CLAIMED IS:

1. A bicycle display apparatus comprising:  
a display device adapted to be mounted to the bicycle, wherein the display device displays various types of information to a rider;  
a light sensor; and  
a display control element operatively coupled to the display device and to the light sensor for controlling the display device in accordance with signals from the light sensor.
2. The apparatus according to claim 1 wherein the display device comprises:  
a liquid crystal display unit for displaying the various types of information; and  
a backlight for illuminating the liquid display unit.
3. The apparatus according to claim 2 wherein the display control element controls the backlight in accordance with the signals from the light sensor.
4. The apparatus according to claim 3 wherein the display control element selectively turns the backlight on and off in accordance with the signals from the light sensor.
5. The apparatus according to claim 2 wherein the display control element selectively changes at least one of a hue, a color saturation or a luminance of the backlight in accordance with the signals from the light sensor.
6. The apparatus according to claim 1 wherein the display control element controls the type of information displayed to the rider in accordance with the signals from the light sensor.
7. The apparatus according to claim 1 further comprising a light adapted to be mounted to the bicycle, wherein the display control element controls the light in accordance with the signals from the light sensor.
8. The apparatus according to claim 7 wherein the light comprises a headlight.

9. The apparatus according to claim 1 further comprising an alternating current generator for supplying electric power to at least one of the display device and the display control element.

10. The apparatus according to claim 9 wherein the alternating current generator is mounted on a hub axle of a bicycle wheel.

11. An apparatus used for shifting a bicycle transmission having a plurality of gear positions, wherein the apparatus comprises:

a running condition detector that detects a running condition of the bicycle;

a light sensor; and

a gearshift control element operatively coupled to the running condition detector and to the light sensor and providing a control signal for controlling the bicycle transmission in accordance with signals from the light sensor.

12. The apparatus according to claim 11 wherein the running condition detector detects bicycle speed.

13. The apparatus according to claim 11 wherein the running condition detector detects crank RPM.

14. The apparatus according to claim 11 further comprising a light adapted to be mounted to the bicycle, wherein the gearshift control element controls the light in accordance with the signals from the light sensor.

15. The apparatus according to claim 14 wherein the light comprises a headlight.

16. The apparatus according to claim 11 further comprising an alternating current generator for supplying electric power to the gearshift control element.

17. The apparatus according to claim 16 wherein the alternating current generator is mounted on a hub axle of a bicycle wheel.

18. The apparatus according to claim 16 wherein the running condition detector detects the running condition from an alternating current signal from the alternating current generator.

19. The apparatus according to claim 11 wherein the gearshift control element changes shift timing of the bicycle transmission in accordance with the signals from the light sensor.

20. The apparatus according to claim 19 wherein the gearshift control element changes gearshift timing in at least one of an upshift direction and a downshift direction in accordance with the signals from the light sensor.

21. The apparatus according to claim 11 wherein the gearshift control element includes a shift threshold memory that stores a shift threshold value, and wherein the gearshift control element provides the control signal when the running condition detected by the running condition detector passes the shift threshold value.

22. The apparatus according to claim 21 wherein the threshold memory stores an upshift threshold value and a downshift threshold value for at least one of the gear positions, wherein the gearshift control element provides an upshift control signal when the running condition detected by the running condition detector passes the upshift threshold value, and wherein the gearshift control element provides a downshift control signal when the running condition detected by the running condition detector passes the downshift threshold value.

23. The apparatus according to claim 22 wherein the gearshift control element provides an upshift control signal when the running condition detected by the running condition detector exceeds the upshift threshold value, and wherein the gearshift control element provides a downshift control signal when the running condition detected by the running condition detector falls below the downshift threshold value.

24. The apparatus according to claim 20 wherein the shift threshold memory stores a plurality of shift tables, each shift table storing a plurality of the shift threshold values, and

wherein the gearshift control element selects among the plurality of shift tables in accordance with the signals from the light sensor.

25. The apparatus according to claim 11 wherein the gearshift control element adjusts timing of the providing of the control signal in accordance with the signals from the light sensor.

26. The apparatus according to claim 11 wherein the gearshift control element selectively prohibits shifting to at least one gear position in accordance with the signals from the light sensor.

27. The apparatus according to claim 11 wherein the gearshift control element includes a manual mode of operation and an automatic mode of operation, and wherein the gearshift control element switches between the manual mode of operation and the automatic mode of operation in accordance with the signals from the light sensor.

28. The apparatus according to claim 11 wherein the gearshift control element provides a sound when a gearshift operation is to occur, and wherein the gearshift control element controls an attribute of the sound in accordance with the signals from the light sensor.

29. The apparatus according to claim 28 wherein the gearshift control element controls at least one of an on/off state, a volume or a tone of the sound in accordance with the signals from the light sensor.